

# VALVE SEAT GRINDER

July 1, 1965

WEATHERLY INDEX

850

Designed to give years of trouble-free service. Pilots are hardened and ground. Driver incorporates a powerful ball bearing type universal motor. Wheel dresser has positive stops for accurate dressing of wheel. Pilot wrench is of patented construction enabling quick insertion and release of pilot in guide. Wheel holders have hardened and ground bushings, ball bearing type have dust sealed bearings.

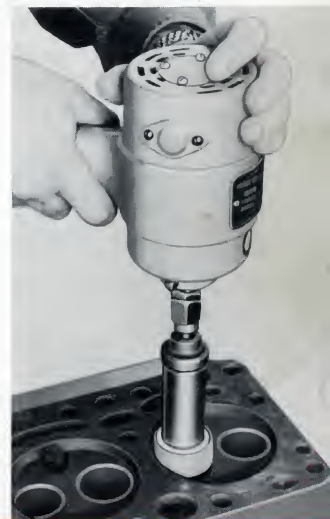


**Model P302BB**

## NO BIG INVESTMENT IN PILOTS

Each pilot ranges from  $-.003$  to  $+.007$  of basic range stamped on pilot. One pilot does the work of several solid type pilots.

Silver Gray Hammerloid Finish box is of heavy gauge steel construction and has individual storage for all pilots available. Space is provided for storage of additional attachments and angle drive.



## MODEL P302BB UNIVERSAL BALL BEARING VALVE SEAT GRINDER

DESIGNED TO SERVICE MOST CARS, TRUCKS, AND TRACTORS

Consists of the following equipment:

One P61	Pilot Wrench	One P235	1-1/2"	General Purpose Grinding Wheel
One P83	5/16" Self Expanding Pilot	One P235F	1-1/2"	Finishing Grinding Wheel
One P84	11/32" Self Expanding Pilot	One P235R	1-1/2"	Roughing Grinding Wheel
One P84L	11/32" Self Expanding Pilot (6 1/2" Length)	One P237	1-5/8"	General Purpose Grinding Wheel
One P85	3/8" Self Expanding Pilot	One P237F	1-5/8"	Finishing Grinding Wheel
One P97R	.394" Self Expanding Pilot (Oldsmobile Rocket)	One P237R	1-5/8"	Roughing Grinding Wheel
One P97	13/32" Self Expanding Pilot	One P239	1-3/4"	General Purpose Grinding Wheel
One P86	7/16" Self Expanding Pilot	One P239F	1-3/4"	Finishing Grinding Wheel
One P87	1/2" Self Expanding Pilot	One P239R	1-3/4"	Roughing Grinding Wheel
One P88	9/16" Self Expanding Pilot	One P241	1-7/8"	General Purpose Grinding Wheel
One P372	Wheel Dresser with No. P176D Diamond Screw	One P241F	1-7/8"	Finishing Grinding Wheel
One P189	Tube Brush for cleaning Holder	One P241R	1-7/8"	Roughing Grinding Wheel
One P196X	Ball Bearing Grinding Wheel Holder (11/16" Threaded End)	One P243	2"	General Purpose Grinding Wheel
One P198X	Ball Bearing Grinding Wheel Holder (9/16" Threaded End)	One P247	2-1/4"	General Purpose Grinding Wheel
One P190B	Adapter Bushing (9/16" to 11/16").....No Charge	One P251	2-1/2"	General Purpose Grinding Wheel
One P522	Utility Driver with Safety Button Switch and 10 ft. 3 conductor cable with plug (3rd wire for ground), 110 volt AC-DC	One P500B	Handy Tool Chest (10" high x 14-3/16" wide x 10-3/4" deep—Weight 21 lbs.)	
One P223	Hexagonal Ball Terminal for 15/32" shaft			

Net Shipping Weight 45 lbs.

With the substitution of P190 for the P196X and the P191 for the P198X, the P302BB set becomes the P302 set.

**K. O. LEE COMPANY, ABERDEEN, SO. DAKOTA**



# "K. O. Lee" VALVE SEAT GRINDERS

## Model P300 Basic Valve Seat Grinder

Designed to service only those cars, trucks, and tractors the purchaser desires. In addition to the items listed below, the operator must select those stones, pilots, and other accessories necessary to service selected motors. Shipping Weight 39 lbs.

- One P61 Pilot Wrench
- One P372 Wheel Dresser with No. P176D Diamond Screw
- One P189 Tube Brush for cleaning Holder
- One P190 Grinding Wheel Holder (11/16" Threaded End)
- One P522 Utility Driver with Safety Button Switch, 110V
- One P223 Hexagonal Ball Terminal for 15/32" Shaft
- One P500B Box (10" high x 14-3/16" wide x 10-3/4" deep)

With substitution of P196X for P190, set becomes P300BB ball brg. set.

## Model P301 Junior Valve Seat Grinder

Designed to service most makes of cars, small trucks, and tractors. Additional grinding wheels, pilots and other accessories may be purchased when needed. Shipping Weight 41 lbs.

- One P61 Pilot Wrench
- One P83 5/16" Self Expanding Pilot
- One P84 11/32" Self Expanding Pilot
- One P85 3/8" Self Expanding Pilot
- One P97R Self Expanding Pilot (Oldsmobile Rocket)
- One P372 Wheel Dresser with No. P176D Diamond Screw
- One P189 Tube Brush for cleaning Holder
- One P190 Grinding Wheel Holder (11/16" Threaded End)
- One P522 Utility Driver with Safety Button Switch, 110V
- One P223 Hexagonal Ball Terminal for 15/32" Shaft

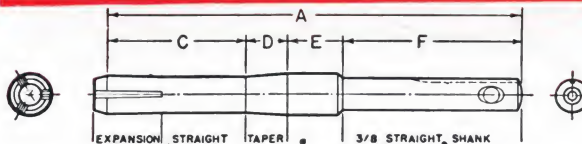
One each of the following Grinding Wheels:

- P235 1-1/2", P237 1-5/8", P239 1-3/4" General Purpose
- P235F 1-1/2", P237F 1-5/8", P239F 1-3/4" Finishing
- P235R 1-1/2", P237R 1-5/8", P239R 1-3/4" Roughing

- One P500B Box (10" high x 14-3/16" wide x 10-3/4" deep)

With substitution of P196X for P190, set becomes P301BB ball brg. set.

## SELF EXPANDING PILOTS



The Simplest, Most Accurate Pilot Made!

All advantages of a solid one-piece taper pilot plus the accuracy and rigidity assured by the expansion of the lower end are contained in a K-O Pilot. The true center of a worn guide is found and as a result the valve seat is reconditioned concentric with the actual operating line of movement of the valve stem.

The taper that contacts the upper part of the guide is slight. The pilot anchors deep down in the guide where proper bearing is obtained.

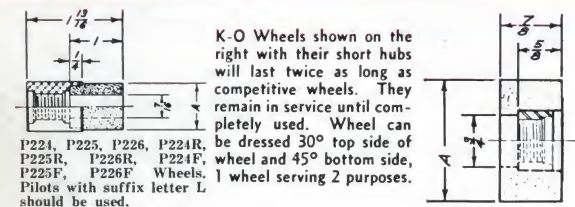
Pilot No.	Pilot Size	A	C	D	E	F
P95	1/4	5 1/2	1 3/2	7/8		3 3/8
P95S	1/4	4 3/2	3/2	7/8		3
P95L	1/4	6 1/2	1 3/2	7/8		4 3/8
P96	5/2	5 1/2	1 3/2	7/8		3
P96S	5/2	4 3/2	3/2	7/8		3
P96L	5/2	6 1/2	1 3/2	7/8		4 3/8
P83	3/8	5 1/4	1 3/4	3/4		2 3/4
P83R	3/8+.015	5 1/4	1 3/4	3/4		2 3/4
P83RL	3/8+.015	6 1/4	1 3/4	3/4	1/2	3 1/4
P83S	3/8	4 3/8	1 3/8	3/4		2 3/8
P83L	3/8	6 1/4	1 3/4	3/4	1/2	3 1/4
P84	1/2	5 1/4	1 3/4	3/4		2 3/4
P84S	1/2	4 1/2	1 1/4	3/4		2 3/8
P84M	1/2	4 1/2	1 1/8	3/8		1 3/8
P84L	1/2	6 1/4	1 3/4	3/4		3 3/4
P84R	1/2+.015	5 1/4	1 3/4	3/4		2 3/4
P84RL	1/2+.015	6 1/4	1 3/4	3/4		3 3/4
P85F	.370	5 3/4	2	3/4		3
P85	3/8	5 3/4	2	3/4		3
P85R	3/8+.015	5 3/4	2	3/4		3
P85RL	3/8+.015	7 1/4	2 1/4	3/4	1	3 1/4
P85S	3/8	4 1/2	1 1/4	3/8		2 3/8
P85L	3/8	7 1/4	2 1/4	3/4	1	3 1/4
P97R	.397	5 3/8	1 7/8	3/4		3 1/8
P97	1/2	6	2 1/4	3/4		3
P97L	1/2	8 1/4	2 1/4	3/4	1 1/2	3 3/4
P86	3/8	6 1/4	2 1/2	3/4		3
P86M	3/8	7 1/2	2 1/2	3/4	1	3 1/4
P86RM	3/8+.015	7 1/2	2 1/2	3/4	1	3 1/4
P86L	3/8	8 1/2	2 1/2	1 1/8	1 3/8	3 3/4
P86S	3/8	5 1/4	1 3/8	3/4		3
P94M	1/2	7 1/2	2 1/2	3/4	1	3 1/4
P87	1/2	6 1/4	2 1/2	3/4		3
P87L	1/2	8 1/8	2 1/2	1 3/8	1	3 3/8
P87M	1/2	7 1/8	2 1/2	1 3/8		3 3/8
P93	1/2	6 3/4	2 1/2	3/4		3 1/2
P88	3/8	6 1/4	2 1/2	3/4		3
P88M	3/8	7 1/8	2 1/2	1 3/8		3 3/8
P88L	3/8	8	2 1/2	1 3/8	3/8	3 3/4
P92	1/2	5 1/4	1	1/2	3/4	3
P89	3/8	6 1/4	2 1/2	3/4		3
P98	1/8	6 1/4	2 1/2	3/4		3
P98L	1/8	8 3/8	2 1/2	1 3/8	1	3 1/2
P99	3/4	6 3/4	2 1/2	1		3 1/4
P91L	1 1/2	4 3/4	3/4	1/2		3 3/8
P8236	6MM	4 3/8	1 3/8	3/8		2 3/8
P8236S	6MM	4 1/2	3/2	3/8		2 3/8
P8255	6 1/2MM	4 3/8	1 3/8	3/8		2 3/8
P8275	7MM	4 3/8	1 3/8	3/8		2 3/8
P8295	7 1/2MM	5 3/2	1 3/2	3/4		2 3/4
P8315	8MM	5 3/2	1 3/2	3/4		2 3/4
P8334	8 1/2MM	5 3/2	1 3/2	3/4		2 3/4
P8354	9MM	5 3/2	1 3/2	3/4		2 3/4
P8374	9 1/2MM	5 3/4	1 3/2	3/4		3
P8393	10MM	5 3/4	1 3/2	3/4		3
P8472	12MM	6 1/4	2 1/2	3/4		3
P8820	.820	4 3/4	3/4	1/2		3 1/2

P90 .850" Special Pilot for Ford V-8 60.

P91 1-1/32"x1" Special Pilot for Ford V-8 for use when lifters are removed from engine.

Each pilot ranges from -.003" to +.007" of basic range stamped on pilot. One pilot does the work of several solid type pilots.

P61 Pilot Wrench must be used with above Wheel Holders.



GENERAL PURPOSE	FINISHING WHEELS	ROUGHING WHEELS	A-DIAM.	GENERAL PURPOSE	FINISHING WHEELS	ROUGHING WHEELS	A-DIAM.
P224	P224F	P224R	3/4"	P238	P238F	P238R	1 1/8"
P225	P225F	P225R	1 1/8"	P239	P239F	P239R	1 3/4"
P226	P226F	P226R	1 1/4"	P240	P240F	P240R	1 1/8"
P227	P227F	P227R	1 1/4"	P241	P241F	P241R	1 1/8"
P228	P228F	P228R	1 1/4"	P242	P242F	P242R	1 1/8"
P229	P229F	P229R	1 3/8"	P243	P243F	P243R	2 "
P231	P231F	P231R	1 1/4"	P245	P245F	P245R	2 1/4"
P232	P232F	P232R	1 3/8"	P247	P247F	P247R	2 1/4"
P233	P233F	P233R	1 3/8"	P251	P251F	P251R	2 1/2"
P234	P234F	P234R	1 3/8"	P255	P255F	P255R	2 3/4"
P235	P235F	P235R	1 1/2"	P259	P259F	P259R	3 "
P236	P236F	P236R	1 3/8"	P261	P261F	P261R	3 1/4"
P237	P237F	P237R	1 3/8"	P263	P263F	P263R	3 1/2"

### GRINDING WHEELS FOR STELLITE

No.	A-Diam.	No.	A-Diam.	No.	A-Diam.	No.	A-Diam.
P2355	1 1/2"	P2415	1 3/4"	P2475	2 1/4"	P2595	3 "
P2375	1 3/4"	P2435	2 "	P2515	2 1/2"		
P2395	1 3/4"	P2455	2 1/4"	P2555	2 3/4"		

\*Wheels have 1/16" — 16thd. All other K-O Wheels have 1/8" — 16thd. Sioux, Skil, Thor, U. S. Electric Tool also have 1/8" — 16thd. K-O Wheels with 1/8" S.A.E. threads can be used on 1/8" threaded end K. O. Lee holders and those made by other manufacturers such as Black and Decker, by using a No. P190B Bushing (1/8" to 1/4"). This bushing is furnished no charge to purchasers of K-O Wheels. Wheels P224, P225, P226, P227, P228, P229 are designed for small engine service.

### GENERAL PURPOSE

### Grinding Wheels For Kwik-Way

WHEELS HAVE 13/16" — 13 THREAD

No.	A-Diam.	No.	A-Diam.	No.	A-Diam.	No.	A-Diam.
P236K	1 3/8"	P241K	1 3/8"	P247K	2 1/4"	P259K	3 "
P237K	1 3/8"	P243K	2 "	P251K	2 1/2"	P261K	3 1/4"
P239K	1 3/8"	P245K	2 1/4"	P255K	2 3/4"	P263K	3 1/2"

# THE TOOL WITH 101 USES



# VALVE SEAT GRINDER ACCESSORIES

## "K. O. Lee" UTILITY DRIVER

P522 1/3 H.P. UTILITY DRIVER with safety button switch and 10 ft. 3-conductor cable, 115V and 230V motors available — specify voltage.

P322 32V 1/4 H.P. UTILITY DRIVER available.



**GROUNDING.** These motors are equipped with a three conductor cord with the ground wire (green covered conductor) connected internally to the motor housing. To give maximum protection connect the plug-in of this green ground wire to a permanent ground or a suitable grounding device.

### "K-O" PILOT WRENCHES

Pilots are instantly placed in or removed from valve guides with this wrench. Easy and simple to operate, the K-O Pilot Wrench is a great time saver to the mechanic.

- P61 Standard "K-O" Pilot Wrench.  
P361 Special "K-O" Pilot Wrench for Crosley Engines.



## "K. O. Lee" WHEEL DRESSER

### P372 Wheel Dresser

#### FEATURES:

- The K-O Wheel Dresser is mounted on non-skid rubber pads which eliminate vibration and hold it firmly to the work bench while wheel is being dressed. It is quick and simple to operate as the plunger and diamond are held by constant friction and require no locks or adjustment for the life of the tool.
- The plunger is protected from abrasive dust by dust seals at both ends.
- The swivel is graduated with positive stops for 0, 15, 30, 45, 60, 75 and 90 degrees.
- Vertical screw adjustment for raising or lowering position of grinding stone, making possible diamond dressing of smallest diameter wheels and any angle requirements.



Dressing Wheel to Desired Diam.

Base Dimensions.....5 1/2" x 7 1/2" Net Weight.....10 1/4 lbs.

## GRINDING WHEEL HOLDERS



- 1/2" HEX DRIVE**  
P190 4" long, 1/2" hex socket, 11/16" threaded end  
P5190 2 3/4" long, 1/2" hex socket, 11/16" threaded end (For Kaiser-Frazer, other hard to reach seats)  
P191 4" long, 1/2" hex socket, 9/16" threaded end  
P196X Ball bearing, 4" long, 1/2" hex socket, 11/16" threaded end  
P198X Ball bearing, 4" long, 1/2" hex socket, 9/16" threaded end  
P398 4" long, 7/8" dia., 1/2" hex socket, 9/16" threaded end (for Crosley).
- 5/8" HEX DRIVE**  
P197X Ball bearing, 4" long, 5/8" hex socket, 11/16" threaded end.  
P199X Ball bearing, 4" long, 5/8" hex socket, 9/16" threaded end.  
P390 4" long, 5/8" hex socket, 11/16" threaded end.  
P5390 2 3/4" long, 5/8" hex socket, 11/16" threaded end.  
P391 4" long, 5/8" hex socket, 9/16" threaded end.  
P399 4" long, 7/8" diameter, 5/8" hex socket, 9/16" threaded end (for Crosley).
- To obtain exchange price on new wheel holders, a used K. O. Lee wheel holder must accompany order.

## ANGLE DRIVE ATTACHMENT



P360 1/2" Hex Angle Drive Attachment

P362 5/8" Hex Angle Drive Attachment

The K-O Angle Drive Attachments can be used when grinding airplane cylinders and hard-to-get-at seats in automobile motors. Fits all drivers. Over-all length 11"; net weight 14 oz.

### P460 GEARED ANGLE DRIVE — 60°

A rugged angle drive designed especially for close quarters such as the back valve seats on Kaiser, Frazer, Studebaker Trucks, etc. Available in two gear ratios, 1 to 1 for grinding wheels up to 2 1/2 diam., 1 1/2 to 1 for larger grinding wheels. Fits all drivers.



- P460 Geared Angle Drive (1 to 1, 1/2" hex drive)  
P461 Geared Angle Drive (1 1/2 to 1, 1/2" hex drive)  
P462 Geared Angle Drive (1 to 1, 5/8" hex drive)  
P463 Geared Angle Drive (1 1/2 to 1, 5/8" hex drive)

## VALVE SEAT INDICATOR

### P350 Indicator to Fit 3/8" Pilot

A K-O Valve Seat Indicator will prove a decided advantage to any mechanic. The few seconds used to check a valve seat grinding job may save hours of labor later on. It is sound insurance against "come-backs." The K-O Indicator, having but one adjustment, is simple and easy to operate.



## HEX BALL TERMINALS AND ADAPTER SLEEVES

- P223 1/2" Hex Ball Terminal for 15/32" Motor Shaft  
P220 5/8" Hex Ball Terminal for 15/32" Motor Shaft  
P216S Split Adapter Sleeve (15/32" to 5/16")  
P217S Split Adapter Sleeve (15/32" to 3/8")



## CARBON REMOVING WIRE BRUSHES

Must Be Used With P217 Collet Chuck

- WB210S Wire Brush (7/8" diameter)  
WB220S Wire Brush (1 1/8" diameter)  
WB210F Wire Brush (1 1/2" diameter—flared)



## VALVE GUIDE REAMERS

### Solid Type



"K. O. Lee" Valve Guide Reamers will ream faster and cleaner and hold size longer making them the most economical in the end.

Number	Size	Number	Size	Number	Size
H1236	6MM	H1334	8 1/2MM	H1393	10MM
H1250	1/4"	H1343	11/32"	H1397	.397"
H1255	6 1/2MM	H1353	11/32" + .010	H1406	13/32"
H1275	7MM	H1363	11/32" + .020	H1437	7/16"
H1281	9/32"	H1354	9MM	H1472	12MM
H1295	7 1/2MM	H1373	3/8" — .002	H1500	1/2"
H1312	5/16"	H1374	9 1/2MM	H1625	5/8"
H1315	8MM	H1375	3/8"		

# EVERY ACCESSORY THE OPERATOR WANTS



# VALVE SEAT GRINDER ACCESSORIES

## HAND GRINDING ATTACHMENTS



P280 Hand Grinding Attachment

- One P278 Flanged Wheel Holder for 15/32" Shaft
- One P217 1 1/4" Collet Chuck for 15/32" Motor Shaft
- One P275C Guard for 2 1/2" Cup Wheel
- One P275E Guard for 4" Plain Wheel
- One P275B Motor Band for holding Guards
- One PR3BH60 3" x 1/8" x 5/8" hole, Plain Wheel
- One PR3DH60 3" x 1/4" x 5/8" hole, Plain Wheel
- One PR3FH60 3" x 3/8" x 5/8" hole, Plain Wheel
- One PR3GH60 3" x 1/2" x 5/8" hole, Plain Wheel
- One CR2 1/2 MH60 2 1/2" x 1 1/4" x 5/8" hole, Cup Wheel
- One P135L 1" x 1" x 1/4" Shank Mounted Wheel
- One P137D 1 1/2" x 1/4" x 1/4" Shank Mounted Wheel
- One P137G 1 1/2" x 1/2" x 1/4" Shank Mounted Wheel
- One P138L 2" x 1" x 1/4" Shank Mounted Wheel
- One E1 Abrasive Wheel Dresser

### EXTRA WHEELS

- One P136L 1 1/4" x 1" x 1/4" Shank Mounted Wheel
- One P137L 1 1/2" x 1" x 1/4" Shank Mounted Wheel



P217 Collet Chuck

1/4" Collet Chuck for 15/32" Motor Shaft for holding mounted wheels, abrasive disk holders.

### ADAPTER SLEEVES

For use with P217 Collet Chuck. P278 Flanged Wheel Holder. P220 and P223 Hex Ball Terminal and P281 Drum Arbor to old style driver having small shaft diameter.

- P216S Split Adapter Sleeve (15/32" to 5/16")
- P217S Split Adapter Sleeve (15/32" to 3/8")
- P218S Split Adapter Sleeve (1/4" to 1/8") for use on P217 Collet Chuck only

## ABRASIVE DISC ATTACHMENT

P277 Abrasive Disc Attachment



- One 416 Abrasive Disc, 4" diameter, No. 16 grit, 1/4" hole
- One 424 Abrasive Disc, 4" diameter, No. 24 grit, 1/4" hole
- One 436 Abrasive Disc, 4" diameter, No. 36 grit, 1/4" hole
- One 460 Abrasive Disc, 4" diameter, No. 60 grit, 1/4" hole
- One 480 Abrasive Disc, 4" diameter, No. 80 grit, 1/4" hole
- One 4100 Abrasive Disc, 4" diameter, No. 100 grit, 1/4" hole
- One 516 Abrasive Disc, 5" diameter, No. 16 grit, 1/4" hole
- One 524 Abrasive Disc, 5" diameter, No. 24 grit, 1/4" hole
- One 536 Abrasive Disc, 5" diameter, No. 36 grit, 1/4" hole
- One 560 Abrasive Disc, 5" diameter, No. 60 grit, 1/4" hole
- One 580 Abrasive Disc, 5" diameter, No. 80 grit, 1/4" hole
- One 5100 Abrasive Disc, 5" diameter, No. 100 grit, 1/4" hole
- One P277C 3 1/4" Fibre Backing for Abrasive Disc
- One P277D 4 1/4" Fibre Backing for Abrasive Disc
- One P277H Abrasive Disc Holder only
- One P277F Flange Washer for 4" x 1/8" Grinding Wheel
- One PS4BH60 4" x 1/8" x 5/8" hole, plain Grinding Wheel

NOTE: Both the 3 1/4" and 4 1/4" Fibre Backings should be used to support 5" Discs, whereas only the 3 1/4" Backing is necessary for 4" Discs. When the outer edge of a Disc is worn, it can be trimmed by holding it edgewise against any sharp metal while the Driver is running.

## TOOL POST HOLDER

With the use of a tool post holder listed below, the Driver can be quickly mounted on a lathe for internal and cylindrical grinding.

- P270 Tool Post Holder, 3/8" x 3/4" Shank
- P273 Tool Post Holder, 1/2" x 1" Shank
- P274 Tool Post Holder, 5/8" x 1 1/4" Shank
- P274R Motor Switch Hold Down Ring

# "K. O. Lee" UTILITY HAND GRINDER SET



## HAND GRINDING ATTACHMENT (P280)

Used with mounted wheels, it's ideal for die and pattern makers. With straight and cup wheels up to 4" it's a versatile tool for any shop.

## TOOL POST HOLDER (P270)

Three shank sizes available. Doubles as auxiliary handle for sanding and off-hand grinding.

## ABRASIVE DISC ATTACHMENT (P277)

Uses 4" and 5" abrasive discs. High speed cuts faster, prevents loading. Complete with 14 assorted abrasive discs.



## P400 UTILITY HAND GRINDER SET

includes

- P522 Utility Driver
- P270 Tool Post Holder
- P277 Abrasive Disc Attachment
- P280 Hand Grinding Attachment
- P200B Steel Box

### features:

ONE TOOL FOR MANY JOBS. The powerful "K-O" Utility Motor is compact, light weight and easy to handle. Quickly and easily adapted for use with 4" and 5" abrasive discs, grinding wheels from small mounted ones to 3" diameter straight and cup wheels. Tool post holder converts it to a tool post grinder or doubles as an extra handle for off-hand work. Packed in sturdy, attractive steel box with ample room for extra sanding discs, grinding wheels and accessories.